

- (amorphous crystn.; semiconductor devices having a **single crystal silicon thin-film transistor**
 formed on a glass substrate and fabrication thereof)
- IT 7440-59-7, Helium, uses 12385-13-6, Atomic hydrogen, uses
 (plasma; semiconductor devices having a **single crystal silicon thin-film transistor**
 formed on a glass substrate and fabrication thereof)
- IT 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7440-02-0,
 Nickel, uses 7440-04-2, Osmium, uses 7440-05-3, Palladium, uses
 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8,
 Ruthenium, uses 7440-22-4, Silver, uses 7440-48-4, Cobalt, uses
 7440-50-8, Copper, uses 7440-57-5, Gold, uses
 (silicon crystn. catalyst; semiconductor devices having a
single crystal silicon thin-film transistor formed on a glass substrate and
 fabrication thereof)

L145 ANSWER 16 OF 40 HCA COPYRIGHT 2004 ACS on STN

126:138618 Semiconductor devices having **single crystal**
 thin-film transistors formed on glass substrates and fabrication
 thereof. Yamazaki, Shunpei; Teramoto, Satoshi (Handotai Energy
 Kenkyusho, Japan). Jpn. Kokai Tokkyo Koho JP 08298242 A2 19961112
Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1995-125908 19950426.

Claims ✓
AB

The title process involves forming a sublayer on a glass substrate, forming an **amorphous Si film** on the sublayer, dehydrogenating the **Si film** by H-plasma treatment, heating or laser-irradiating for crystn., patterning to give **crystal seed layer**, depositing an **amorphous Si film** over the **seed layer**, heating or laser-irradiating to grow **single crystal** in the **Si film** from the **seeds**, and subsequently patterning the grown **Si film** to give **single cryst. regions** on the sublayer. The **single cryst. Si regions** are provided for active layers in thin-film transistors.

- IC ICM H01L021-20
 ICS H01L029-786; H01L021-336
 CC 76-3 (Electric Phenomena)
 ST silicon **single cryst** thin film transistor; TFT
single cryst silicon glass substrate
 IT Sputtering
 (etching, hydrogen, dehydrogenation; semiconductor devices having **single crystal** thin-film transistors formed on glass substrates and fabrication thereof)
 IT Vapor deposition process
 (plasma; semiconductor devices having **single**

crystal thin-film transistors formed on glass substrates and fabrication thereof)

IT Dehydrogenation

Laser crystallization

Thin film transistors

(**semiconductor** devices having **single**

crystal thin-film transistors formed on glass substrates and fabrication thereof)

IT Etching

(sputter, hydrogen, dehydrogenation; semiconductor devices having **single crystal** thin-film transistors formed on glass substrates and fabrication thereof)

IT Glass, properties

(substrate, transparent; semiconductor devices having **single crystal** thin-film transistors formed on glass substrates and fabrication thereof)

IT 7440-21-3, Silicon, properties

(amorphous; semiconductor devices having **single crystal** thin-film transistors formed on glass substrates and fabrication thereof)

L145 ANSWER 17 OF 40 HCA COPYRIGHT 2004 ACS on STN

112:14609 Lateral epitaxy. Nishigaki, Yuji; Yamagata, Kenji; Yonehara, Takao (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 01042117 A2 19890214 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-198688 19870808.

AB The title method entails formation of fine particles of a material on a surface with a small nucleation d. (e.g., amorphous insulator), melt-solidification of the material for formation of **seed** crystals, and growth therefrom. Thus, an **amorphous Si film** 0.2 .mu.m thick on a quartz glass plate was photolithog. patterned with spots 1 .mu.m in diam., the spots were annealed by a **laser** beam, and **Si single crystals** 40 .mu.m in diam. and (100) oriented parallel to the substrate were grown at 950.degree. in substrate temp. from SiH₂Cl₂-HCl-H₂ in 30 min.

ICM H01L021-20

ICS H01L021-263; H01L021-268

CC 75-1 (Crystallography and Liquid Crystals)

IT Epitaxy

(lateral, from fine **seeds** on low-nucleation d. surfaces)

IT Epitaxy

(vapor-phase, lateral, of silicon from fine **seeds** on quartz glass surface)

IT 7440-56-4, Germanium, uses and miscellaneous

(lateral VPE of gallium arsenide from fine **seeds** of, on quartz glass)